



PERMIT APPLICATION REVIEW SUMMARY

New Hampshire Department of Environmental Services
Air Resources Division
P.O. Box 95, 29 Hazen Drive
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Phone: 603-271-1370 Fax: 603-271-7053

Facility:	Internal Combustion Engines – Emergency Generators or Fire Pump Engines				Engineer:	Catherine Beahm	
Location:	New Hampshire						
AFS #:	N/A	Application #:	N/A	Date:	April 30, 2015		Page 1 of 11

PROJECT DESCRIPTION

This project is for the renewal of the General State Permit (GSP) for the source category *Internal Combustion Engines Used as Emergency Generators*, which expires on April 30, 2015. The source category is being renamed to *Internal Combustion Engines – Emergency Generators or Fire Pump Engines* for clarity since the device that emits air pollutants is the engine and not the generator and the GSP covers fire pump engines as well as generators.

This GSP is designed to consolidate all applicable regulations for all types of internal combustion engines: **compression ignition** (typically diesel fired), **spark ignition** (typically natural gas, gasoline, propane, or digester gas fired); both those that are used in conjunction with **emergency generators** used to create electricity during an emergency situation or with **fire pump engines** used to provide mechanical power.

This GSP is NOT designed for engines used to generate electricity for prime power production, direct drive power (e.g. crusher or chipper engines) or peak shaving or non-emergency demand response¹.

CHANGES FROM PREVIOUS PERMIT

- Include the definition of and limitations inherent to emergency engines from 40 CFR 60, Subparts IIII and JJJJ and 40 CFR 63, Subpart ZZZZ.
- Update the requirements of 40 CFR 60, Subparts IIII and JJJJ and add the requirements of 40 CFR 63, Subpart ZZZZ.
- Remove recordkeeping and reporting requirements to reflect changes to Env-A 900.
- Change fee requirements to reflect changes to Env-A 700.

FACILITY DESCRIPTION

Engines are commonly used at power and manufacturing plants to generate electricity and to power pumps and compressors. Engines are also used in emergencies to produce electricity and pump water for flood and fire control at industrial, commercial and institutional facilities. Engines are common combustion sources that collectively can have a significant impact on air pollution. Engines emit the conventional air pollutants created when fuel is burned, including sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (TSP) as well as hazardous air pollutants (HAPs) such as formaldehyde.

PROCESS/DEVICE DESCRIPTION

The permitting threshold for this GSP is one or more internal combustion engines at a source where:

- Each device combusts liquid fuel oil and has a design gross heat input greater than 0.15 MMBtu/hr, and the combined total design gross heat input for all such devices is greater than or equal to 1.5 MMBtu/hr; or
- Each device combusts gaseous or liquefied propane gas fuel and has a design gross heat input greater than 1.5 MMBtu/hr, and the combined total design gross heat input of all such devices is greater than or equal to 10 MMBtu/hr.

¹ Stationary engines are classified as non-emergency when they are used on a continuous base-loaded basis (prime power) or for peak shaving or non-emergency demand response to reduce use of electricity from the grid for financial compensation or if they are used in either a rate curtailment or interruptible rate program to reduce energy rates. In addition, NH regulations prohibit engines to be classified as emergency generators if the device is turned on prior to and in anticipation of an emergency situation such as a power outage caused by a storm. Any engine used under these situations would not qualify for this GSP. Please contact NHDES in these situations.

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This GSP is applicable ONLY to devices that operate as emergency engines as defined in both the federal and state regulations. Therefore, each engine covered under the GSP is limited to 500 hours of total operation during any consecutive 12-month period. This includes:

- Operation during emergency situations. Examples include engines used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or normal power source, if the facility runs on its own power production) is interrupted, or engines used to pump water in the case of fire or flood, etc.; and
- Operation for 100 hours per calendar year for any combination of the following:
 - Maintenance checks and readiness testing, and
 - Emergency demand response (EDR) (in situations when a blackout is imminent - either the reliability coordinator has declared an Energy Emergency Alert Level 2 as defined in the North American Reliability Corporation (NERC) Reliability Standards; or there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency - this is also equivalent to a declaration of ISO-NE Operating Procedure 4, Action Level 6).

The following table has been created to assist GSP holders in identifying what category their emergency engine(s) fits for NSPS and NESHAP rule applicability. Both the date construction commenced **and** the manufacture date must be met to fit the category.

Table 1 - Emission Unit Identification					
Emission Unit ID	Description of Emission Unit	Permitted Fuel Type	Date Construction Commenced ² (Ordered)	Manufacture Date	Applicable NSPS and/or NESHAP Regulation
EU01	All Internal Combustion Engines	Diesel and Gas-fired	On or before July 11, 2005	On or before April 1, 2006	40 CFR Part 63 Subpart ZZZZ (existing)
EU02	All Diesel-fired (CI) Internal Combustion Engines that are <u>NOT</u> Fire Pumps	Diesel-fired	After July 11, 2005	On or before April 1, 2006	40 CFR Part 63 Subpart ZZZZ (existing)
EU03	All Diesel-fired (CI) Internal Combustion Engines that are <u>NOT</u> Fire Pumps	Diesel-fired	After July 11, 2005 but on or before June 12, 2006	After April 1, 2006	40 CFR Part 63 Subpart ZZZZ (existing) AND 40 CFR Part 60 Subpart IIII
EU04	All Diesel-fired (CI) Internal Combustion Engines that are <u>NOT</u> Fire Pumps	Diesel-fired	After June 12, 2006	After April 1, 2006	40 CFR Part 60 Subpart IIII
EU05	Certified National Fire Protection Association Fire Pumps	Diesel-fired	After July 11, 2005 but on or before June 12, 2006	On or before July 1, 2006	40 CFR Part 63 Subpart ZZZZ (existing)

² These dates apply both to the “commenced construction” date of new engines as well as the date that any existing engines are “modified” or “reconstructed”. Modification and reconstruction have specific definitions which can be found at: §60.14 and §60.15.

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Table 1 - Emission Unit Identification

Emission Unit ID	Description of Emission Unit	Permitted Fuel Type	Date Construction Commenced² (Ordered)	Manufacture Date	Applicable NSPS and/or NESHAP Regulation
EU06	Certified National Fire Protection Association Fire Pumps	Diesel-fired	After July 11, 2005 but on or before June 12, 2006	After July 1, 2006	40 CFR Part 63 Subpart ZZZZ (existing) AND 40 CFR Part 60 Subpart IIII
EU07	Certified National Fire Protection Association Fire Pumps	Diesel-fired	After June 12, 2006	On or before July 1, 2006	None
EU08	Certified National Fire Protection Association Fire Pumps	Diesel-fired	After June 12, 2006	After July 1, 2006	40 CFR Part 60 Subpart IIII
EU09	All Gas-fired (SI) Internal Combustion Engines	Gas-fired	Before June 12, 2006	Before January 1, 2009	40 CFR Part 63 Subpart ZZZZ (existing)
EU10	All Gas-fired (SI) Internal Combustion Engines	Gas-fired	After June 12, 2006	Before January 1, 2009	None
EU11	All Gas-fired (SI) Internal Combustion Engines	Gas-fired	After June 12, 2006	On or after January 1, 2009	40 CFR Part 60 Subpart JJJJ

POLLUTION CONTROL EQUIPMENT

None required for emergency engines under the applicable regulations.

EMISSION CALCULATIONS

This GSP shall only be issued to a stationary source, area source, or device whose facility-wide actual emissions are less than the major source thresholds (Env-A 610.02(b)). In addition, Env-A 610.05(3)(c) requires that when a source category is established, the stationary sources, area sources, or devices that would be covered by the proposed source category are all subject to the same regulatory requirements. Therefore, NHDES is limiting facility-wide emissions of NO_x in this GSP to less than 50 tons per year (tpy) to exclude any source that would otherwise be subject to Nitrogen Oxides Reasonably Available Control Technology (NO_x RACT Env-A 1301.02(n)). Owners and/or operators shall also be required to limit fuel utilization at the facility to avoid exceeding these emission limitations.

Since actual emissions of total air pollutants emitted from engines that operate pursuant to this GSP have historically been less than 1 tpy, NHDES has revised Env-A 700 and Env-A 900 regarding the calculation of actual emissions for determining annual emission-based fees. Therefore, this section will not go into the detailed list of acceptable emission factors that can be used to calculate actual emissions. However, for engines subject to 40 CFR 60, Subparts IIII and JJJJ, there are specific emission standards that the engine manufacturer must certify the engine meets based on model year and maximum engine power. These USEPA-certified emission standards are listed in 40 CFR 60, Subparts IIII and JJJJ. It is the owner and/or operator of the engine that is responsible for purchasing appropriate certified engines, operating the engines according to manufacturer's specifications to ensure emissions continue to meet the certified levels and maintaining records of the certification (i.e. specification sheet for the engine) and the maintenance conducted on the engine.

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MODELING

Pursuant to Env-A 606.02(c), an air pollutant emission dispersion modeling analysis for regulated air pollutants shall not be required for an emergency generator or other engines used for mechanical power in emergencies, such as fire pump engines, where the hours of operation are limited to 500 hours per year or less by an enforceable permit condition. Pursuant to Env-A 1402.01, the emissions of regulated toxic air pollutants (RTAPs) resulting from the combustion of virgin petroleum products at stationary sources shall be exempt from regulation under RSA 125-I and Env-A 1400.

EMISSION TESTING

For 40 CFR 60, Subpart IIII (CI diesel-fired emergency engines):

Except for engines ≥ 30 liters per cylinder displacement, performance testing is not required. The owner and/or operator achieve compliance by:

- Purchasing a new engine that has been certified by USEPA, and
- Install, configure, operate, and maintain the engine per the manufacturer's instructions.

For 40 CFR 60, Subpart JJJJ (SI gas-fired emergency engines):

For certain SI engines manufactured on/after July 1, 2008, the engine manufacturer is required to certify that the engine meets emission limits. Owners and/or operators of these engines can comply by purchasing a certified engine and operating it according to manufacturer's instructions. These SI engine types include:

- All SI engines ≤ 25 hp;
- Gasoline-fired engines > 25 hp; and
- Rich burn LPG engines > 25 hp.

For other SI engines, USEPA made it optional for the manufacturer to certify that their engines meet the applicable emission limits. Owners or operators can comply either by purchasing an engine that the manufacturer has voluntarily certified, or by conducting performance testing to demonstrate that the engine meets the applicable emission limits.

NHDES is limiting the GSP to only those devices which are **certified** and installed, configured, operated or maintained according to the manufacturer's emission related written instructions or has only changed emission-related settings in a way that is permitted by the manufacturer. Any other engine that meets any of the above requirements for stack testing shall notify NHDES of such applicability and apply for a Temporary Permit which will contain the applicable source specific stack testing requirements.

COMPLIANCE STATUS

Inspections

Pursuant to 125-C:6 Powers and Duties of the Commissioner, the commissioner shall have and may exercise the following powers and duties: [including but not limited to] entering at all reasonable times in or upon any private or public property, except private residences, for the purpose of inspecting or investigating any condition which is believed to be either an air pollution source or in violation of any of the rules or orders promulgated hereunder. Therefore, NHDES personnel shall be granted access to any facility covered by this GSP, in accordance with RSA 125-C:6, VII for the purposes of: inspecting the proposed or permitted site; investigating a complaint; and assuring compliance with any applicable requirement found in the New Hampshire Rules Governing the Control of Air Pollution and/or conditions of any permit issued pursuant to Chapter Env-A 600.

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Reports

Recent changes to Env-A 700 and 900 have resulted in the removal of the requirement for GSP permit holders to submit an annual emission report and annual emission based fees. However, facilities with actual annual NOx emissions greater than 10 tpy are still required to submit the NOx Emission Statements report specified in Env-A 909.03. In addition, the federal regulations require the owner/operator to submit an annual report to USEPA, Region 1 and NHDES if they own or operate any one of the following engines:

- Any **existing** emergency engine subject to 40 CFR 63, Subpart ZZZZ with a site rating of more than 100 brake hp that is operated or contractually obligated to be available for more than 15 hours per calendar year for emergency demand response (EDR), or
- Any **new** emergency engine subject to 40 CFR 60, Subparts IIII or JJJJ with a maximum engine power more than 100 hp that is operated or contractually obligated to be available for more than 15 hours per calendar year for EDR.
- The annual report must contain the following information:
 - Company name and address where the engine is located.
 - Date of the report and beginning and ending dates of the reporting period.
 - Engine site rating and model year.
 - Latitude and longitude of the engine in decimal degrees, reported to the fifth decimal place.
 - Hours operated for the purposes of EDR, including the date, start time, and end time for engine operation.
 - Number of hours the engine is contractually obligated to be available for the purposes of EDR.
 - Hours spent for operation for the purposes of local reliability, including the date, start time, and end time for engine operation. The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.
 - For engines subject to 40 CFR 63, Subpart ZZZZ only, if there were no deviations from the fuel requirements that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period. If there were deviations from the fuel requirements, information on the number, duration, and cause of deviations, and the corrective action taken.
 - The first annual report must cover calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.
 - The annual report must be submitted electronically using the subpart-specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through USEPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to the subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to USEPA via regular mail.

Emergency engines are not required to submit an Initial Notification pursuant to 40 CFR 60, Subpart IIII §60.4214(b) and 40 CFR 63, Subpart ZZZZ §63.6645(a)(5). In addition, 40 CFR 60, Subpart JJJJ §60.4245(c) only requires an Initial Notification be submitted by owners and operators of stationary SI engines greater than or equal to 500 hp that have not been certified by an engine manufacturer to meet the emission standards.

Fees

Recent changes to Env-A 700 have resulted in a change from the emission-based fee structure to the GSP registration fee structure. Therefore, owners or operators seeking to operate under the GSP shall submit a registration fee calculated in accordance with Env-A 702.05(b) together with the registration package.

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REVIEW OF REGULATIONS

State Regulations

Env-A 100 Organizational Rules

- 101.671 – Applicable – Definition of emergency generator

Env-A 600 – Permitting

- 607.01(d) – Applicable
- 610 – Applicable – *General State Permits and General Permits Under Title V*

Env-A 700 – Permit Fee System

- 702.05 – Applicable – *General State Permit (GSP) Registration Fee for Emergency Generators*

Env-A 800 - Testing and Monitoring Procedures – Applicable

Env-A 900 – Owner or Operator Recordkeeping and Reporting Obligations – Applicable³

Env-A 1300 – Nitrogen Oxides (NOx) Reasonably Available Control Technology (RACT)

- 1301.02(n) – Facility-wide NOx is limited by a permit condition to < 50tpy. Therefore NOx RACT does not apply.

Env-A 1400 – Regulated Toxic Air Pollutants

- 1402.01 – Not applicable to sources burning virgin fuel.

Env-A 1600 – Fuel Specifications

- 1603.01(a) – Applicable if the engine is burning #2 fuel oil - #2 fuel oil is limited to 0.40% sulfur by weight.

Env-A 2000 – Fuel Burning Devices

- 2002.01 – Applicable – *Visible Emission Standard for Fuel Burning Devices Installed on or Prior to May 13, 1970.*
- 2002.02 – Applicable – *Visible Emission Standard for Fuel Burning Devices Installed After May 13, 1970.*
- 2002.04(c) – Applicable – Average opacity shall be allowed to be in excess of those standards specified in Env-A 2002.01 and Env-A 2002.02 for one period of 6 continuous minutes in any 60-minute period during startup, shutdown, and malfunction.
- 2003.01 – Applicable – *Particulate Emission Standards for Fuel Burning Devices Installed on or Prior to May 13, 1970.*
- 2003.02 – Applicable – *Particulate Emission Standards for Fuel Burning Devices Installed after May 13, 1970 but before January 1, 1985.*
- 2003.03 – Applicable – *Particulate Emission Standards for Fuel Burning Devices Installed on or after January 1, 1985.*

³ A rule of thumb for determining applicability of the recordkeeping and reporting requirements of the annual NOx Emission Statement is that actual annual NOx emissions of 10 tons per year (tpy) would conservatively equate to 33,000 gallons per year of diesel or gasoline fuel burned in the emergency engines. This number was derived from the most conservative US EPA AP-42 NOx emission factor for small, uncontrolled diesel fired engines (4.41 lb/MMBtu from Table 3.3-1). Most facilities with a small number of emergency engines that have small design ratings (hp or kW) or which operate cleaner, newer engines subject to 40 CFR Part 60, Subparts IIII and JJJJ will not reach this applicability threshold. However, if the facility has other devices that emit NOx (i.e. boilers), multiple emergency engines, or larger or older emergency engines, the NOx emission threshold may be reached even when operating less than 500 hours per year. Therefore, the owner or operator shall keep records sufficient to determine facility wide NOx emissions for applicability of these recordkeeping and reporting requirements.

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Federal Regulations

40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* – Applicable depending on age of engine.

40 CFR 60, Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* – Applicable depending on age of engine.

40 CFR 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines* – Applicable

Per an August 9, 2010 USEPA Memo by Melanie King titled "Guidance Regarding Definition of Residential, Commercial, and Institutional Emergency Stationary RICE in the NESHAP for Stationary RICE"³, an engine(s) located at a residential, commercial or institutional facility is exempt from the requirements of Subpart ZZZZ provided the device is:

- an existing engine;
- located at an area source of HAP emissions;
- not operated or contractually obligated to be available for more than 15 hours per calendar year for EDR; and
- does not operate for non-emergency situations as part of a financial arrangement with another entity.

The device must still meet the requirements associated with the definition of “emergency engine” under Subpart ZZZZ.

GENERAL GUIDANCE FOR SOURCES

The Department recognizes the increased complexity of the GSP and the regulations that pertain to engines used as emergency generators and fire pumps. Therefore, the following is some general guidance to be used in conjunction with the GSP to help clarify the requirements.

Source Category Description and Definitions and Emission Unit Identification

The first two sections of the GSP are designed to help the permittee categorize their engine by Emission Unit ID number. By doing this, the permittee can then focus on the specific requirements in the remainder of the GSP that pertain to that EU number. The permittee should use this section to identify the EU number for each of their engines since regulations may be different for each engine at one facility. In addition, the permittee should verify the date the engine was first ordered and when it was manufactured in order to make the correct EU identification. This becomes increasingly important for engines that are newer (2005 or later).

State Operating and Emission Limitations (Condition III of GSP)

The requirements in Table 2 come from the NH Rules Governing the Control of Air Pollution, were included in the previous GSP and are not new. Specifically:

- Item 1 is designed to limit the facilities covered by this GSP to minor source levels. Most facilities would qualify for this status without having to verify it just based on air emission sources located at the facility. However, if you have oil-fired boilers, multiple emergency generators or operate a manufacturing facility, you would want to verify your potential air emission levels to ensure that you are capable of living with these limitations.

³ Residential emergency stationary engines include those used in residential establishments such as homes or apartment buildings. Commercial emergency stationary engines are used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities. Institutional emergency stationary engines are used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police and fire stations. Guidance on the RICE NESHAP residential-institutional-commercial emergency engine definition can be found at http://www.epa.gov/ttn/atw/icengines/docs/guidance_emergency_engine_def.pdf.

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- Item 2 is designed to limit fuel consumption in the engines to a level to ensure compliance with Item 1. In addition, it limits facilities to **burning virgin petroleum products (e.g. Ultra Low Sulfur Diesel (ULSD), diesel, #2 fuel oil, kerosene, etc.) as well as natural gas, propane and biofuels.**
- Item 3 is the sulfur limits for certain fuels that may or may not be burned in your specific engine. These limits are statewide limits for the fuel suppliers that also apply to the user. Later on in the GSP, if you burn one of these fuels, you are required to provide documentation to confirm you bought and burned compliant fuel.
- Item 4 limits the operation of the engine to **500 hours per year**. Item 5 describes exactly what **type of operation** you may use the engine for. That means you can turn the engine on if:
 - The primary power source is not available due to an emergency (i.e. **power outage**); or
 - Normal **maintenance and testing** as recommended by the manufacturer; or
 - Emergency Demand Response (EDR)** program in situations when a blackout is imminent - either the reliability coordinator has declared an Energy Emergency Alert Level 2 as defined in the North American Reliability Corporation (NERC) Reliability Standards; or there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency - this is also equivalent to a declaration of ISO-NE Operating Procedure 4, Action Level 6.
 - Please note that in order to qualify as an emergency engine under federal regulations, it is imperative that you **not** operate the engine for load-shaving, peaking power production, or for more than the 100 hours per year for maintenance and testing which is a limitation contained in a further section of the GSP.
- Items 6 and 7 set opacity standards for the emissions from the engine. The permittee should operate the engines according to manufacturer's recommendations to minimize the amount of "smoke" that is emitted from the device during operation.
- Item 8 allows for the opacity to be higher than the standards in Items 6 and 7 for no more than 6 minutes during any 1 hour period during a startup, shutdown or malfunction of the engine. Again, prudent operation of the engine is recommended.
- Items 9, 10, 11 establish particulate matter emission limits based on the age of the device. Compliance with particulate emission standards can only be verified through stack testing for particulate matter, which is not typically requested of emergency generators. However, the Department has historical information (USEPA established AP-42 emission factors for engines or USEPA certified emission limits for newer engines) that indicates these devices are capable of meeting the particulate matter standard under normal operating conditions.

Federal Operating and Emission Limitations (Condition IV of GSP)

Compression Ignition (CI) NSPS Subpart III Rules (Table 3) [Typically diesel-fired engines]

Table 3 of this section pertains to newer engines as described in the beginning section of the table. It is important for the permittee to identify if their engine is subject to these requirements.

- Item 1 requires the owner or operator of newer engines to **purchase certified engines** and install, operate and maintain them in accordance with the **manufacturer's written instructions** over the life of the engine. You should request a specification sheet for the engine which will state right on it whether the device is certified to EPA emission levels. Later in the GSP you will be required to keep this specification sheet, a copy of the manufacturer's written instructions and records that you maintain the engine according to these instructions. Attached is a sample specification sheet.
- Item 2 limits the sulfur content of the diesel fuel burned in these engines to **ULSD (< 15 ppm or 0.0015 percent by weight)**.
- Item 3 limits the hours allowed for **maintenance and testing** to **100 hours per calendar year** along with an opportunity to petition for more hours if necessary.

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Spark Ignition (SI) NSPS Subpart JJJJ Rules (Table 4) [Typically gas-fired engines]

Table 4 of this section pertains to newer engines as described in the beginning section of the table. It is important for the permittee to identify if their engine is subject to these requirements.

- Item 1 requires the owner or operator of newer engines to **purchase certified engines** and install, operate and maintain them in accordance with the **manufacturer's written instructions** over the life of the engine. You should request a specification sheet for the engine which will state right on it whether the device is certified to EPA emission levels. Later in the GSP you will be required to keep this specification sheet, a copy of the manufacturer's written instructions and records that you maintain the engine according to these instructions.
NOTE: Manufacturers of certain SI engines were not required to certify their engines meet the EPA emission levels. The GSP was written specifically for the certified engines. This is because uncertified engines are required to stack test for compliance purposes. The Department recommends that if you want to avoid stack testing and be covered under the GSP, that you purchase only certified SI engines.
- Item 2 limits the sulfur content of the gasoline fuel burned in these engines to **< 80 ppm**.
- Item 3 limits the hours allowed for **maintenance and testing to 100 hours per calendar year** along with an opportunity to petition for more hours if necessary. There is also a provision for natural gas fired boilers to burn propane for a maximum of 100 hours per year for emergencies.

Reciprocating Internal Combustion Engine (RICE) NESHAP Subpart ZZZZ Rule (Table 5) [Typically older engines]

Table 5 of this section pertains to older engines as described in the beginning section of the table. It is important for the permittee to identify if their engine is subject to these requirements.

- Item 1 limits the hours allowed for **maintenance and testing to 100 hours per calendar year** along with an opportunity to petition for more hours if necessary.
- Item 2 is a list of maintenance requirements. Specifically:
 - Change oil and filter annually**, or in accordance with an Oil Analysis Program;
 - Inspect all hoses and belts annually** and replace as necessary;
 - Operate and maintain** the engine according to a maintenance plan written either by the manufacturer or the owner/operator; and
 - Minimize idling** during startup, not to exceed 30 minutes.
- Item 3 requires CI engines to **inspect air cleaner annually**.
- Item 4 requires SI engines to **inspect the spark plugs annually**.
- Item 5 requires the owner/operator of those engines that participate in EDR to burn only **ULSD (< 15 ppm sulfur or 0.0015 percent by weight)** starting January 1, 2015.
- Item 5 are general provisions regarding good air pollution control practices.

Monitoring and Testing Requirements (Condition V of GSP)

- Item 1 is general language stating that the Department can request a stack test at any time.
- Item 2 is one of two ways to demonstrate compliance with the sulfur limits for liquid fuel. One way is for the owner/operator to do actual testing of each shipment of fuel. The other way is to **retain delivery tickets** from the fuel supplier as outlined below.
- Item 3 requires all engines to be equipped with a **non-resettable hour meter**.
- Item 4 outlines the optional **Oil Analysis Program**.

Recordkeeping Requirements (Condition VI of GSP)

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- Item 1 contains general language requiring owners/operators to keep all records on file for **5 years**.
- Item 2 contains a statement about what the **delivery ticket** for liquid fuel must contain for information.
- Item 3 contains a list of general recordkeeping requirements for the owners/operators to maintain for compliance purposes and for emission calculations. Specifically, the owner/operator shall maintain:
 - **Type** (i.e. diesel fuel, ULSD, gasoline, kerosene, natural gas, propane) and **amount of fuel burned** in each device; or
 - Type and amount of fuel burned in multiple devices and **hours of operation** of each device to be used to apportion fuel use between the multiple devices⁴; and
 - **Hours of operation** of each emergency generator.
- Item 4 contains a list of specific recordkeeping associated with CI NSPS engines. Specifically, the owner or operator must retain:
 - **Specification sheet** for the engine showing it complies with the applicable emission standards for that size and age of engine; and
 - **Manufacturer's operation and maintenance manual**.
- Item 5 contains a list of specific recordkeeping associated with SI NSPS engines. Specifically, the owner or operator must retain:
 - **Specification sheet** for the engine showing it complies with the applicable emission standards for that size and age of engine;
 - **Manufacturer's operation and maintenance manual**; and
 - **Hours of operation** when natural gas-fired engines operate on propane.
- Item 6 contains a list of specific recordkeeping associated with RICE NESHAP engines. Specifically, the owner or operator must retain:
 - **Manufacturer's operation and maintenance manual**; or
 - **Owner-developed maintenance plan**.
- Item 7 contains a list of recordkeeping associated with all NSPS and NESHAP engines. Specifically, the owner or operator must keep records of:
 - **Maintenance** conducted on the engine;
 - **Hours of operations** and **reason** the engine was in operation; and
 - Documentation of why the owner or operator needed to conduct **maintenance and testing** for more than 100 hrs/yr.
- Item 8 requires recordkeeping for all other emergency engines which shall contain the **hours of operations** and **reason** the engine was in operation.
- Item 9 is a general NO_x recordkeeping requirement for owners or operators of sources that have actual emissions equal to or greater than 10 tons/year of NO_x. Typically, emergency generators covered by a GSP do not emit more than 1 ton/year of all pollutants combined, but the owner or operator of engines located at a facility that operates

⁴ Typically the owner or operator does not have fuel meters installed on the emergency generators. Therefore, the owner or operator may track hours of operation of each emergency generator on a monthly basis (hr/month) and assume every hour of operation is at maximum capacity (gal/hr) for each device in order to calculate the amount of fuel burned in each emergency generator (gal/month). If the device can burn multiple fuels, the owner or operator shall track hours of operation for each fuel type.

PERMIT APPLICATION REVIEW SUMMARY						
Facility:	Internal Combustion Engines – Emergency Generators or Fire Pump Engines			Engineer:	Catherine Beahm	
Location:	New Hampshire					
AFS #:	N/A	Application #:	N/A	Date:	April 30, 2015	Page 11 of 11

oil-fired boilers, multiple emergency generators or a manufacturing facility, would want to verify the actual NOx emission levels to ensure that you are not required to keep these records and submit the corresponding report.

- Item 10 is the EDR recordkeeping requirements for those facilities for which this applies. If you participate in an EDR program, you must keep these records and submit the corresponding report.

Reporting Requirements (Condition VII of GSP)

- Item 1 contains the **NOx Emission Statement Report** for facilities that have actual NOx emissions greater than or equal to 10 tons/year.
- Item 2 contains the **EDR Report** requirements.
- Item 3 (along with Condition IX) contains information regarding the **GSP Registration Fee**.